

RESPONSE FROM HASHEM AKBARI RE: KARL GUTTMAN COMMENTS, sent via email to Elaine Hebert, California Energy Commission 6/27/02
2005 STANDARDS

>>> Hashem Akbari <H_Akbari@lbl.gov> 06/28/02 11:19AM >>>

Hi Elaine,

I do not have any data or know how to get the required data to respond to the question of the impact of albedo on the temporary blindness of airplane pilots. But here I try to put things in prospects:

1. Typically roof areas make about 20-25% of the overall urban area. An increase of even a 0.50 in roof albedo, will only change the albedo of the area by at most 0.10 to 0.125.
2. Flat roof areas are only about 20% of the total roof area. Hence, the impact of the proposed change in the Standard is only about 0.02 to 0.025 on the area albedo.
3. When one approaches (by air) in cities like Phoenix, one would see a lot of "pleasant non-blinding" white roofs. In a couple of occasions, I asked the pilots if the white roofs were a problem. The answers were negative. Actually, one of them commented that they fly over snow frequently and they do not have problems with reflection.
4. I would actually like to see any report or references that addresses the impact of solar reflectance on pilot visibility.
5. The light reflected from a typical white roof is very diffuse and it does not look like a mirror (specular reflectance).

In short, I do not believe high-albedo roofs should be of any problem to pilots.

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Elaine Hebert wrote:

Here's a comment on the 2005 Standards that we received by email after the May 30 workshop. It covers several topics from the standards, and Bill Pennington is trying to make sure all appropriate parties (you) get to see such comments from the public. All comments we receive in hard copy or by email are posted to the 2005 Standards website according to the workshop they stem from.

www.energy.ca.gov/2005_standards/documents/index.html. Questions, contact Bryan, Bill, or me. Thanks, Elaine ehbert@energy.state.ca.us 916/654-4800

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Comment from Karl Guttman

Via Email to Bill Pennington at the California Energy Commission

SUBJECT: Proposed changes to Title 24 Energy Standards

>>> Karl Guttman <kguttman@gb-eng.com> 05/29/02 10:20AM >>>

We would like you to consider the following comments in connection with some of the proposed changes:

1 Water cooled chillers over 200 TR should not be required for ice or chilled water storage systems or any systems where the chiller is operated primarily during off-peak hours (may require definition of "primarily"). There should also be exceptions allowed if water is in short supply (desert areas). Is this change meant to apply to plant capacity or unit capacity? E.g., if you have a 300 TR plant, can you use two air cooled 150 TR chillers?

2. Duct insulation at R-4 should be allowed if $t_o - t_i < 20$ degrees (or some such figure).

3. Time of Day Valuation: We understand the reasoning behind this proposed change, but are somewhat concerned about instability at the time of change from off-peak to on-peak and vice versa, resulting in loss of temperature control and/or increased demand charges.

4. Highly reflective roofs, if they represent very large areas (may need definition of "very large"), can represent a hazard to aviation because they could temporarily blind pilots.

> Karl Guttman

> Principal

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